THE
VETERINARY RECORD.

The Official Journal of the National Veterinary Medical Association of Great Britain and Ireland, Limited.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 8. FEBRUARY 23, 1924. VOL. 4.

On the Humanity of Methods of Slaughter.

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Reprinted from THE LANCET, 1923, II., 1382.

While blood is a medium in which microbes readily grow, muscle is far more resistant to their invasion; this is because each muscle fibre is not only enclosed in a homogeneous membrame, but turns acid after death. The more blood therefore left in flesh, the greater will be the tendency to putrefaction, and the less the keeping quality. Every good housewife knows that flesh left lying on a dish turns faint quickly where oozings of blood touch it; she also knows that to keep suet sweet, the lumps of fat must be broken up and freed from blood-vessels and connective tissue, and then kept dry in flour to which it gives up its moisture.

Traditional Methods of Slaughter.

Now the butchers claim that animals killed by being shot in the brain cannot be so well drained of blood and lymph as those killed by the old traditional methods. In consequence, the flesh is moister, not so firm, weeps drops of blood and serum when cut, while the fat is softer and is not so white and shows spots and streaks of blood in places. The bacon-curers also say that the carcases of pigs killed by shooting show extravasations or "blood-splashings" which are so disfiguring that competition with the bacon and ham of animals slaughtered by the old method—that is, by cutting the big arteries in the neck and bleeding—is out of the question, and therefore their trade will be ruined if the shooting method is made compulsory. These contentions are reasonable, and have, as I shall show later, a solid basis of physiological science behind them. They are supported by the photographs of bacon splashed with blood, which were given me by a bacon-curer, and are confirmed by the results of a recent test of the various methods of slaughter conducted by the Birmingham authorities at their public abattoir. I was one of those invited to witness there the killing of oxen, sheep, and pigs by means of various safety pistols and by the old method—viz., the pole-axe for oxen and throat-cutting for oxen (Jewish method), and the latter for sheep and pigs. It is generally assumed by laymen that the shooting is much more humane than the older methods. They suppose that the cutting of the throat is a most painful operation, and that struggling movements are necessarily a sign of pain. Educated in the false ideas and statements of writers of romance, they are easily led astray by agitators having no knowledge of physiological science, nor surgical experience. Now the surgeon knows that sudden big injuries are not felt at the time of their infliction. He knows, moreover, that structures beneath the skin, apart from sensory nerves, are insensitive to the knife. It is well known that men injured in battle—severely and perhaps fatally—often fight on unaware that they are wounded until they see the blood or become exhausted. At most the wounded feel a dull sensation of a blow and numbness in the injured part. Pain comes later when a wound becomes septic and inflamed. The merciful insensitiveness of man to severe injury was impressed upon me, when I was a young house surgeon, by two cases—one of a man with his pelvis crushed between the buffers of a train. Conscious, although collapsed, he was able to tell me that he had felt no pain; shortly afterwards he died of shock. A similar case was that of a man impaled by the shaft of an iron railing through falling out of a window.

Is Throat-cutting Painful?

In defending the Jewish method of slaughter from unjust attack, the distinguished surgeon, Mr. T. H. Openshaw, stated that several cases of throat-cutting, which surviving from their injury had come under his care at the London Hospital, were questioned by him. Not one of these had felt the cut when it was made. When a very sharp knife is used to cut the healthy (not inflamed) skin, very little pain is felt—even by a man who is expecting the cut—particularly so in parts, such as the back, which are not so trained to delicate sensibility as the finger-tips. Horses standing loose in a stall are bled from the jugular vein for the obtaining of anti-diphtheritic serum; they continue during the operation to eat placidly at the manger. Sensitive as the horse is to the sting of a fly, or whip, or prick of a spur, it takes no notice of the cut of a sharp knife. The skin has been evolved sensitive only to those things which concern it in the natural struggle for existence, and deep structures, apart from sensory nerves, protected as they are by the skin, are wholly insensitive to touch. The touch of whip or spur is like the sting of a fly, and is therefore felt by the horse, which must protect himself against a natural enemy; on the other hand, the cut of a sharp knife is not a natural stimulus and is unfelt.

Of these facts laymen are, as a rule, wholly ignorant. As to the duration of consciousness after the cutting of the throat, I can cite an experiment made by myself

some years ago when, together with Mr. Openshaw, I defended the Jewish method of slaughter. I anæsthetised a calf and inserted a tube in the peripheral end of the carotid artery—that is, in the end connected with the arteries supplying the brain. It must be borne in mind that the vertebral arteries do not also supply the brain of cattle, but end in the muscles of the head. The tube placed in the artery was filled with a strong saline solution to prevent clotting of the blood, and connected with a mercurial manometer arranged so as to record (on a revolving drum) the blood pressure. The animal's neck was then cut with a sharp knife so as to divide the great blood-vessels at one stroke. The manometer recorded an instant fall of blood pressure which reached zero in a second or two, showing that the circulation in the great brain had ceased. Now we know by human experience that such sudden cessation of the circulation by depriving the brain of oxygen instantly abolishes consciousness, whether produced by pressure on the brain or by heart failure, or by occlusion of the great blood-vessels of the neck. An old medical writer tells of a beggar in Paris who had a large hole in his skull covered with skin. He sat in the street and for a coin allowed a person to press upon his brain, when he fell asleep. The moment the pressure was withdrawn he became conscious again. The very word carotid betokens sleep. Mountebanks used to compress these arteries in a goat and make the animal fall down unconscious or spring up again at their will. The garrotter by compressing these arteries by a grip from behind rendered his victim unconscious while he robbed him of his watch and money. A schoolboy playing at hanging has lost consciousness through the sudden compression of these arteries and has died in consequence. This unhappy accident has been repeated through a general ignorance of the danger.

Adventitious Factors.

Two facts are, then, indisputably established: (1) that a big injury such as throat-cutting, is not felt at the moment of infliction; (2) that the cutting of the big arteries in the throat instantly arrests the circulation in the great brain and abolishes consciousness. The actual operation of cutting the throat is, then, as humane as shooting with the safety pistol, or stunning with the pole-axe. Each of the last two methods requires the correct application to the skull of the weapon, and either may fail in a restive animal which happens to swerve at the critical moment. The cutting of the throat requires the casting of oxen and sheep and the holding of pigs or hoisting in the head-down position, but it cannot fail. Any charge of inhumanity can therefore be made justly not against the cutting of the throat, but only againsr the operation of casting, or hoisting. Now sheep are carried in and cast on their backs on a table whether for shooting or throat-cutting, so any such charge fails in regard to sheep. Oxen, by the Jewish method, are cast by a tackle fastened to their feet and to a hoist. Pigs have a tackle fastened to one hind leg and to a hoist. If both legs were fastened, the animals would be able to jerk themselves up and down. At Birmingham an electric motor was used to both hoist and transfer each pig from the pen to the slaughterer. Nine pigs were thus slaughtered in a space of a little over five minutes. At a big bacon-curing factory pigs are slaughtered far more quickly than this—*e.g.*, at the rate even of ten a minute. On the other hand, a minute or two was spent at the Birmingham tests by the operator manœuvring round each pig, free in a pen, in order to get the pistol in the proper position for shooting, and there was some risk to the operator and much skill required of him. He was an intelligent official, highly trained in the use of the pistol. The pigs may struggle violently after shooting, convulsed by the damage done to the brain. In one case the convulsions were so violent that the throat could not be cut for about three minutes after the shot had been fired. The time spent in shooting pigs is, then, much greater than that spent in cutting the throats of an equal number. So, too, in the case of sheep, shooting requires two operations in the place of one, a serious matter when some hundreds of sheep are killed in one day; it also requires two men when one suffices to hold and cut the throat. Shooting means, then, dearer meat.

Animals, whatever be the method of slaughter, have to be driven to market and pushed, pulled, poked, and tail-twisted by drovers in order to make them go first into the pens outside and then into the slaughter-house itself. By no means can they escape some measure of rough handling. Casting of oxen or hoisting of pigs entails, in my judgment, handling which is no more inhumane than the rest. Conducted skilfully and with electrically-driven hoists these operations may occupy no more or even less time than that spent in forcing and roping an animal into position for shooting. In casting an ox by the Jewish method a mattress is used. Mr. Openshaw found no evidence of bruising post-mortem; it is obviously not to the advantage of the butcher to bruise the meat and cause extravasation of blood in the carcase. The butcher asserts that the more gently beasts are handled and the less driven, the more tender the flesh. It is obvious that it is a disadvantage to exhaust the muscles and produce excess of lactic acid in them. A hunted animal at once goes into rigor mortis after death, and its flesh is tough.

The Consciousness of Animals.

It must be borne in mind that animals have no more consciousness of death than uneducated babies have. Man's recognition of the hideousness and horror of the slaughter-house is the result of education. It is absurd to think—as sentimental people do think—that animals are conscious of the presence of a dead carcase, or spilt blood. Careful observation has convinced me—as it will any level-headed man—that animals in an abattoir are nervous of moving men, of drovers with their pushing, pulling, and tail-twisting, but so soon as they are left alone they become placid and indifferent to the sights about them. Pigs are naturally disturbed by the squeals of other pigs when caught and pulled from their pen, but no more so than when they are

caught for the operation of nose-ringing. Whatever suffering there may be is separable from the actual operation of slaughter, and occurs in the process of driving the beast to and putting it into position for slaughter. Whether an animal is pushed, pulled, and tail-twisted into the right position for the pistol, or cast or hoist into the posture necessary for throat-cutting, appears to me, then, a matter of very small moment. As the result of human experience we must conclude that a cast or hoist animal will be so hypnotised by the unusual position into which it is suddenly put, that it will be able to take no further notice of anything going on around it. The layman must recognise that while an animal with its throat cut continues to breathe and move convulsively for some minutes, these convulsive movements are not signs of consciousness. The shot beast may be convulsed for no less a time. Such convulsions are due to acute anæmia of the power parts of the nervous system. Observation has shown me that the movements of the eyes of an ox become convulsed within a very few seconds of throat-cutting, a sure sign of the acute anæmia and dying state of the centres in the mid-brain. The great brain, where sits consciousness enthroned, ceases to function at once, the mid-brain next, the spinal bulb next, and last, the centres of the spinal cord.

It has been a custom of certain African savages, after decapitation of an enemy, at once to close the blood-vessels of the neck with a cautery, and then amuse themselves by exciting reflex movements in the corpse. No doubt the savage thinks his enemy feels his insults. It is well known that even movements of locomotion can take place in a lower animal the great brain of which has been destroyed. Thus, a fowl, after decapitation, runs round before it falls over. When from an anæsthetised cat the great brain is removed without loss of blood the body continues to carry on its functions, including respiration, and these functions may be studied by the physiologist for many hours—nay, if the body of the animal is kept in a warm bath, even for several days. The layman must discard his crude idea that movement betokens consciousness before he can form any just view of the humanity or inhumanity of a method of slaughter.

The Flesh of Shot Animals.

I now return to the contention of the butchers that the flesh of shot animals is moister and contains more blood, This was clearly shown by the Birmingham tests. Half carcases of selected and representative animals killed by each method were reserved in a locked-up store and examined a week later. On cutting up the carcases and comparing the flesh of the shot oxen with that of the ox killed by the Jewish method, it was clear that the flesh of the latter was firmer, drier, and free from blood. The flesh of the shot carcases not only was moister and softer, but showed blood in the vessels. The flesh of the pole-axed ox appeared to me somewhat drier and freer from blood than that of the shot animals, but there was no striking difference. When the throat is cut by the Jewish method the centres in the lower parts of the nervous system—viz., the spinal bulb and cord—continue to act for a time. Deep, gasping respirations occur, and convulsive movements which press the blood out of the muscles and organs of the belly. The vaso-motor centre in the spinal bulb is excited by the anæmia and causes constriction of the arteries all over the body, the heart is accelerated in action, and the bowels undergo peristaltic movements which wring out the blood. The whole of these actions result in almost complete drainage of blood and tissue-lymph out of the body. When an animal is shot the slaughterers cut the throat—this after some period of delay—and then, respiration having stopped, try to imitate its effect by rocking the body with their feet. The bullet by explosive action may set up increased pressure in the skull, and so stimulate the inhibitory centre of the heart which lies in the spinal bulb, and thus temporarily stop the action of the heart. This is a well-known result of increasing the pressure within the skull, and was shown to occur by the late Sir Victor Horsley when a bullet was fired into the skull. By pole-axing the skull is opened, and it is therefore unlikely that inhibition of the heart should result. After the shooting or pole-axing of an ox the lower nerve centres may be, and generally are, destroyed by the insertion of a cane or wire. This destroys the vaso-motor centre and relaxes the muscles. The blood by either of these methods cannot, therefore, be emptied out from the body so well as it is by the Jewish method.

When the brain of a small mammal is destroyed, as it can be instantly by the passage of a bradawl through the foramen magnum into the skull, it occasionally happens that the physiologist cannot keep the body alive by artificial respiration for the study of its functions. He then finds a clot formed in the right auricle of the heart. It is probable that some damaged tissue—*e.g.*, small fragments of bone—is in these cases carried from the venous sinuses of the brain to the heart, and there set up clotting. Such clotting would be more likely to happen in a shot than in a pole-axed animal; if a clot forms in the heart, bleeding is impeded.

Drawbacks of Pistol and Pole-axe.

It is clear, then, that the Jewish method of killing oxen is the best for draining an animal of blood. In Colombo, Ceylon, cattle are killed by throat-cutting after they have been fastened to tackle, whereby they are tilted into the head-down position, so that the drainage of blood is complete. The machine carries the carcase on to the flayers, &c. By such means cattle can be killed, flayed, and cut up with great rapidity. Properly carried out, no better or more humane method can be devised. The pole-axe is not a certain method in the case of restive animals and in the hands of inexperienced slaughterers. The blow of the axe may sometimes miss the small area of the skull—about the size of a breakfast cup—which has to be struck. Missing this the pole-axe goes into the air spaces within the thick wall of the skull, and does not stun the animal. At Birmingham,

in one case, the first blow brought the ox to its knees, but did not penetrate deeply enough to allow the cane to be used. It was then repeated. The long-armed pistol-killer of the R.S.P.C.A. appears to be a surer method of killing oxen. As in the matter of bleeding, the results of these two methods are not very dissimilar, the choice for oxen would then be with the pistol rather than the pole-axe. The free bullet is, however, not safe to use in slaughter-houses, and while the captive bullet is safe, it is difficult to use on restive or wild animals. An excellent method of slaughtering oxen is in use in Australia. Driven up an inclined path each comes finally to a small narrow enclosure with a window at the end. The ox lifts his head to look over, and a man standing above with a hammer at this moment stuns it. The ox falls, and is then carried down to the slaughter-house where it is hung up and bled. Breathing continues after stunning, so that bleeding is efficiently carried out. An ineffectual attempt to stun a pig with a hammer was made at Birmingham.

In the case of pigs, by fastening the animal head down and cutting the big arteries in the neck, blood and tissue and lymph are drained out by gravity, by convulsive respirations, and by general convulsive movements. When an animal is so bled, lymph passes from the tissues into the capillaries and veins in the effort of the body to keep up an effective circulation. The carcase of the pig thus bled, selected at Birmingham, showed firm dry flesh and firm white fat, and no blood could be squeezed out of the inter-costal veins by running the finger along these. The shot pigs fell on the floor and were more or less convulsed; in one case the convulsions delayed for three minutes the cutting of the throat, The effect of gasping respirations and gravity did not come into play. Hence the carcases of the shot pigs showed moister flesh, pinker fat with blood in the vessels, and here and there small extravasations. It is obvious that such carcasses will keep less well and also be less fit for curing. The bacon-curers say that the pig after shooting often falls with the hind feet so extended that the veins are ruptured, and large extravasations caused which make the hams useless for curing.

I took away the blade bone with some of the muscles attached to it from each one of the selected pigs. I placed a little of the muscle, taken from a similar part in every case, on a glass slide, flattened it out with a cover-slip and examined it under the microscope, using a low power, Blood was then seen here and there in the small blood-vessels and capillaries in the muscle and fat of each of the shot pigs. The muscle and fat of the pig bled in the ordinary manner, on the other hand, showed very little blood. The difference was clear also in sections of hardened and stained muscle, From the shot pigs, and one bled in the old way, I took 2 g. of flesh cut from the same part and minced it in each case in 20 c.cm. of water, and then froze and thawed the mince so as to break up the tissue and set the colour free. The coloured solution was then filtered. That of the pig bled in the old way appeared pale; that of one of the shot pigs

(*Continued at foot of next column.*)

Cancer: A Resumé of Causative Theories, Incidence and Treatment.*

By J. H. Mason, M.R.C.V.S., Glasgow.

In presenting a paper on this subject, I do so, not with the intension of posing as an authority, but with the hope that it will prove of interest, and culminate in a good discussion. At the present moment, cancer is being widely reported upon in the daily papers, so that it is possible that the following may be of topical as well as professional interest. I purposely refrain from entering into the histology of the tumour, both because I have not the time at my disposal, and because it is not necessary at a meeting such as this.

Theories as to Causation.

(1) *Irritation.*—Many examples of this are to be found, *e.g.*, cancer of the scrotum of chimney sweeps; of the skin of the abdomen of Kashmirs, due to carrying earthenware pots containing hot charcoal next to the skin, as a means of keeping warm; of the cheek of Cingalese women, from their eating betel nut. These women commonly allow the plug to rest on one particular portion of the cheek, and it is in this area that the cancer arises. The external application of coal tar can produce the cancer in rabbits; the cancer-producing principle of this

(*Continued from previous column.*)

was pinker; that of the other quite a deep pink. I examined each solution with the spectroscope and found hæmoglobin present. I then found how much water had to be added to each to make the characteristic bands of hæmoglobin almost disappear. Taking 3 c.cm. in each case I had to add 9 c.cm. of water, in the case of the pig bled in the old way 16 c.cm. in the case of one, and no less than 25 c.cm. in the case of the other shot pig. These results confirm what the naked eye observed, and the microscope showed; the muscle of the shot animals contained more blood.

Conclusion.

The butchers and bacon-curers are, then, right in their contention, and on the grounds of humanity, economy, and proper carrying out of a great business they should not be prevented from continuing the old methods of slaughter. These methods have been found right through ages of human experience. It is clear that bleeding is most rapid and complete in the head-down position, and I would urge that all pigs are killed in this position. A pulley and tackle can be used in any village. If a pig is stuck while standing up, bleeding cannot be so free or loss of consciousness so immediate. A chemist in the leather trade tells me that the quality of leather is lowered by the presence of blood in the hide; not only is the leather coloured by the blood, but suppleness is diminished. This is another point in favour of the method which secures most efficient bleeding.

* Presented at a meeting of the West of Scotland Division on January 24th, 1924.

substance is said to have been isolated, and is capable of producing the neoplasm in 100 per cent. of cases. Squamous epithelioma of the root of the horn of cattle used for draught purposes is common, as is cancer of the rectum and mammæ of dogs. According to Delafield, cancer of the liver of cattle is almost always associated with severe biliary cirrhosis.

While it seems fairly certain that irritation plays some part in the production of this new growth, it is doubtful whether it is the whole cause. If it were so, there is the possibility that most human beings and animals would fall victims to the scourge, because most are subjected to some form of chronic local irritation. It is possible that irritation acts by giving some latent cause the necessary start.

(2). *Cell Rests.*—This theory, upheld by Cohnheim, states that all tumours arise from "rests" or groups of embryonic cells which have become arrested in their development during fœtal life and have taken no part in the formation of adult tissues. These rests may remain embedded in the tissue they were intended to form, or may be transplanted to different parts of the body. They are capable of retaining their vitality and, in response to some stimulus of undergoing proliferation and forming a neoplasm. It is not to be supposed that rests do not occur; they have actually been demonstrated; *e.g.*, in man, portions of tissue, closely resembling the adrenal cortex, have been found on the surface of the kidney and more rarely in the liver. The fact, however, that rests actually occur does not necessarily prove that tumours are formed from them.

This theory, standing alone, leaves much unexplained, *e.g.*, why do rests suddenly commence to grow? why is there a definite age incidence in cancer? why do malignant tumours develop at the seat of local irritation, etc.? It is possible that this and the preceding theory might work together.

(3) *Growth liberation.*—This theory, propounded by Ribbert, states that tumours arise from cell rests but it goes further in holding that these may be post- as well as ante- natal. As a result of injury, chronic inflammation, etc., groups of cells may be cut off from their normal relationships, become located in a strange environment, free from physiological control, and at liberty to proliferate.

(4) *Parasites.*—Innumerable parasites have been described as the cause of carcinoma, but at the present moment this theory has little to support it, and it is faced with such questions as: why is cancer not contagious? does the same parasite produce all the different forms of the tumour? is there a different organism for sarcomata? are the non-malignant tumours produced by parasites? when a cancer cell divides, does the contained organism divide with it? why is cancer so difficult to transplant, etc.? It is probable that the vast majority of recorded parasites are either secondary invaders or artefacts, as, for example, Russel's fuchsin bodies. It is interesting to note that Fibiger, of Copenhagen, discovered a nematode worm in a cancer of a rat. by feeding rats with cockroaches infected with these nematodes he experimentally produced cancer.

It is fairly safe to say, however, that the cancer cell is the cancer parasite.

(5) *Age.*—Cancer is a disease of what might be termed early old age; it is commonest in men at the age of fifty-five years and in women at fifty years. On the other hand, sarcoma is a neoplasm of youth. Cesari noted that cancer in horses occurred chiefly in subjects over twelve years.

In the first scientific report of the Imperial Cancer Research Fund, the reported cases show cancer, with one exception (gelding—seven years) to be commonest in old animals. In the cases mentioned in the third report—

The average age of dogs	was	11	years.
,, ,, ,, horses	,,	16	,,
,, ,, ,, cats	,,	9	,,
,, ,, ,, cows	,,	"old."	

In many instances, of course, the age was unobtainable.

According to Walker, about whose theory we shall speak in a moment, cancer occurs at an age when physiological cell proliferation is becoming less active.

(6) *Sex.*—It is more frequent in females, in the proportion of three to two. In the years 1901 to 1903, inclusive, the deaths in England and Wales were: 33,788 males and 55,660 females.

Cesari examined 184 carcinomata. He found the tumour to be six times more frequent in entires than geldings, due to the frequency of cancer of the testicle of the former; three and a half times more frequent in stallions than mares; and one and a half times more frequent in mares than geldings.

According to the Imperial Cancer Research Fund's report:—

Dogs: Of twenty-three cases quoted, ten in females, four in males and nine not stated.

Cats: Of seven cases quoted, three in females, two in males and two not stated.

Horses: Of nine cases quoted, two in females, five in males and two not stated.

Bovines: Of sixteen cases quoted, fourteen in females, one in male and one not stated.

Of the five tumours in male horses, three were in the penis.

In all, fifty-five cases are reported; twenty-nine occured in females, twelve in males, and fourteen not stated.

(7) *Locality.*—It has been proved that the district, town, house, etc., do not enter into the causation of cancer.

(8) *Civilisation.*—It is as common in savage as civilised men, and in wild as domestic animals. On the surface it might seem commoner in civilised men and domestic animals, but this is due to a larger number of cases being reported and diagnosed.

(9) *Heredity.*—Of no account in man. In three generations of large families, there is every probability that one member in two generations will develop cancer. This is strengthened by the fact that one man in every seventeen and one woman in every twelve, who reaches the age of thirty-five years, will die of cancer.

(10) *Contagion.*—Cancer is not contagious. If it were so the occupations of such as nurses, pathologists, etc., would been extremely dangerous.

(11) *Walker's Theory.*—In mammals, the rule is that daughter cells which are the result of division of pre-existing cells are the same as, or very similar to, the mother cells. The nuclear chromosomes of these cells are constant in number for each individual species, and are usually "V" or "U" shaped. In gametogenic cells, *i.e.*, cells capable of producing gametes, such as spermatoza, a special kind of reproductive division, termed "meiotic division," occurs. In this, only half the normal number of chromosomes are produced, but by fusion of the gametes (the spermatozoon and ovum) the full complement is made up.

The meiotic phase is seen in cancer cells. The only cells which *normally* pass out of somatic co-ordination, *i.e.*, out of the control of the physiologic process of the body, are the sperm cells and ova, and as it is in these and cancer cells that meiotic division occurs, Walker concludes that the latter have passed out of somatic co-ordination.

While it is a fact that the meiotic phase is seen in carcinoma, and it has passed out of control of the body, I do not see that this theory explains very much in reference to causation. It records demonstrable facts.

(12) *Bell's Theory.*—Cancer is a disease consequent upon a toxic condition of the blood; normal cell metabolism is weakened, and in an irritated or inflamed area, cell metamorphosis occurs, the result being a malignant tumour. *The colon is the breeding-place of a cancer.* Fermentation occurs here, toxins are absorbed, and these vitiate the blood. This especially happens on a meat diet and during chronic constipation. Bell compares a cancer to a fungus; neither will grow on healthy tissue; it (the tissue) must be devitalised or dead. He also notes that both contain a comparatively large percentage of lecithin, which is allied to neurin, a poisonous ptomaine and a product of decomposing flesh. In autotoxæmia, lecithin will accumulate in pathological, though still minute, quantities in the tissues. An injury or irritation will isolate from physiological control the cells at the seat of the injury. The lecithin will act as an irritant and produce metabolism; the result is a malignant new growth.

Bell's chief points are—flesh is not the natural food for man, constipation is an important predisposing cause, *and* the colon is the starting point.

While Bell's pronouncements have been much criticised, there is something to say for them, *e.g.*, cancer is comparatively uncommon in such as the Japanese, who are not a meat-eating race; and of the domestic animals, the carnivora are the most prone to the malady.

In connection with diet, Walker conducted an experiment with two sets of mice: (1) fed on bread, water, milk and meat, and (2) fed on rice and water. Both sets were affected with cancer. The tumours grew at the same rate in all, the only difference being that group No. 2 did not thrive so well.

Transplantation.—The first successful attempt was by Novinsky in 1876; he transplanted a cancer of the nose of a dog to two other canines. Jenson, a Danish veterinarian, was perhaps the first to do real work on transplantation. He carried a mammary tumour of the mouse through nineteen generations in two and a half years. It is to be noted that transplantations can only be attempted with hope of success on animals of the same species, *e.g.*, from one white mouse to another white mouse. It is improbable that any good results would be got by attempting to pass a tumour from a dog to a rat.

The graft may be deposited in the subcutaneous tissue of the axilla, or an emulsion may be subcutaneously injected. The cells to be grafted must be living and the resulting tumour grows from these cells and not from the tissue of the host.

Zoological Distribution.

Carcinoma has been recorded in nearly all mammals (it is practically certain that it occurs in all), and in birds, amphibians and fish. Up to the present, no malignant new growth has been recorded in reptiles, although innocent tumours, such as fibroma of the stomach of a python and papilloma of the occipital region of a lizard, have been seen,

Fish: 2,000 cases have been recorded. The first authentic one was in 1903, being a cancer of the thyroid of a trout.

Amphibians: Neoplasms are limited here. There is reported cancer of the kidney and skin of thigh of frog, and of the skin glands of the adult male triton.

Birds: Reference is scanty, but it has been seen in the thyroid of a macaw, the mouth of a cock, and the intestine of a fowl.

Domestic Animals: Of these, it is most frequently seen in the dog. Kingsley says that whilst carcinoma is fairly common, sarcoma comes before it in the domestic animals. Loeb has drawn attention to its frequency in the eye of cattle in Western U.S.A.

In stallions, according to Cesari, it is commonest in the testis; in mares in the udder; in geldings in the kidney. According to him, a light colour appears to favour cancer in the testicle and mamma. Hutyra and Marek record it to be common in the anus of dogs. Zimmer examined seventy-three growths of the pharynx of cattle and found: Actinomycosis fifty-four, tuberculosis five, dermoid cysts seven, fibromata four, colloid cysts two, and melanoma one.

The following is taken from the third report of the Imperial Research Fund.

Dog: The tumour is recorded most frequently in the mamma, rectum and anus, palate, tongue, and buccal mucous membrane and the pharynx. Of the thirteen malignant tumours mentioned in the mamma, eight were cancerous and five sarcomatous. On the legs, sarcoma is commoner than carcinoma.

Cat: Eleven tumours are recorded; seven cancer, of these—four in mamma, one in œsophagus and one in tongue.

Horse: Twelve tumours mentioned; nine cancer, of these—one in lip, one in face, three in penis, two in eye, one in vagina, and two in tail.

Ox: Eighteen reported; sixteen cancerous, of these—eleven in eye, one in bowel, one in liver, one in mamma, one in uterus and one in testis. Fourteen of the sixteen were in the female.

Human subject: The following is the organ distribution of cancer for the years 1901 to 1903.

	Male.	Female.
Breast	61	8,367
Uterus	—	11,714
Ovary	—	920
Stomach	7,349	7,119
Intestines	2,385	3,338
Rectum	3,450	2,939
Bladder	1,668	483
Kidney	350	396
Tongue	1,837	249
Brain	367	286

According to Muller and Glass, cancer is observed in all organs of the dog, the columnar-celled variety being common in the mammæ of old bitches. Here it is of slow growth, hard, and with a tendency to remain stationary for a long time. In some regions of the gland a small, hard knot develops; this is insensitive to pressure and shows no inflammatory reaction. It grows slowly and may be accompanied by other knots in the immediate neighbourhood, and these may unite to form one mass. When the enlargement is superficial, a tendency to a peculiar cicatricial contraction of the skin is seen, and if the teat be near, it is drawn into the skin. The surface veins may be varicosed.

Personally, I have encountered the tumour in the following situations: (1) Face of horse—cheek, round about teeth, etc., with metastases in the pharyngeal and submaxillary lymph glands, and in the submaxillary salivary gland; (2) Anus of dog: (3) Three in the skin of dogs; (4) Eyelid of cow; (5) Liver of dog. I mention these particularly because I have a full history of the cases.

Is cancer increasing in man? On the surface it would seem that it is so, but on closer enquiry it is found that the increase is more apparent than real. The census of 1901 showed the population of England, Scotland and Wales to be 36,999,946; of these, 11,752,695 were individuals of thirty-five years and over. The population in 1911 was 40,831,396, and of these there were 14,151,824 persons of thirty-five years and over. That is to say, there were about seventeen per cent. more people of thirty-five years and over in 1911 than in 1901; in other words, the average age of the population had increased. But there was an increase in cancer only to the extent of eight per cent. In addition, diagnosis was perhaps more accurate in 1911, and more cases would be reported. It will therefore be seen that the larger number of cases cannot be reckoned as a true increase, as cancer is a disease of old age; the percentage would have to be over seventeen. Other observers, however, say that it is actually increasing; *e.g.*, Bell states 25,000,000 people now living are, barring some change or discovery, destined to die of this scourge. In the U.S.A. 80,000 people are annually carried off by the disease.

Treatment.

This only occasionally enters into a veterinary surgeon's routine, but a few notes about it will, I think, be of topical interest.

At the present moment there is nothing, medicinally or otherwise, which will definitely effect a cure.

(1) *Surgical Removal.*—This is occasionally successful with a rodent ulcer or squamous epithelioma, but only whnen the operation is thorough, *i.e.*, when every bit of cancerous tissue is removed. The usual result, however, is the appearance of a new growth, or as it is commonly put, the tumour recurs. It is certain that operative measures are practically never successful with internal or breast cancers. In fact, many eminent surgeons claim that surgical interference never did have good results, and some observers state that it is sheer folly to attempt to remove, say, a breast cancer; the irritation caused by the operation will result in the appearance of a new growth. They also say that, even supposing the tumour to be removed is benign (*i.e.*, a simple adenoma), the irritation produced will cause it to become malignant.

(2) *Radium and X-ray.*—Success has, in some instances, been claimed for these, but there is no evidence to show that they exert a more deleterious effect upon malignant than upon healthy cells. *All* exposed cells are destroyed. It is claimed that X-ray treatment has removed rodent ulcer, but in many cases large sloughs have resulted, and tumours have broken down into foul-smelling abscesses.

(3) *Bell's Treatment.*—His theory being that the colon is the breeding place of cancer, a thorough evacuation of that region is essential daily. Flesh should, to a large extent, be eliminated from the diet, and food should be prepared for consumption by steaming and not by boiling. The value of this is that salts are not lost to such an extent, and the nutritive value of the food is not so seriously affected. Food in the raw state is, when possible, to be taken.

Bell also notes that a faulty action of the thyroid (hypothyroidism) is common in cancer, so that an extract of this gland is to be given.

In cancer on or near the skin, air at 170—180°F. blown under pressure on to the tumour is beneficial, but care is to be taken not to scorch the skin.

In epithelioma, injections of formic acid in 10 per cent., 15 per cent., or 25 per cent. solutions give good results.

Atoxyl, an anilide of arsenic, containing 37 per cent. of that substance and being forty times less toxic, is said to be useful. Intramuscular injections are given, ten drops of a 10 per cent. solution three times weekly, increasing up to fifteen or twenty drops. After twenty-one days, the treatment is suspended for a week.

Magnesium colloid, two or three times weekly is beneficial, 2cc. being given subcutaneously.

A recapitulation of Bell's routine treatment is—attention to bowels and diet (milk, eggs, fruit, nuts, etc.), elixir of thyroid, mag. colloid and hot air, firstly and chiefly attention to the bowels.

(4). *Selenium and Eosin.*—A number of cancerous mice received intravenous injections of a solution of these drugs, with the result that liquefaction of the tumours was produced in those animals which survived the treatment; the mortality was 70 per cent. A dilatation of the tumour capillaries and a contraction of the others throughout the body was was produced; the drugs deposited in the tumour and destroyed the cells. The death rate, as a result of the treatment is, however, too high to allow it to be of practical value.

(5) *Pituitary Extract.*—Some mice were injected with this and controls kept. In the treated cases the cancerous growths were checked and hæmorrhages produced. A blanching of the bodies of the mice, but not of the tumours, was produced. The hæmorrhages were often so great as to produce bloody cavities in the centre of the neoplasms, and the pressure of these destroyed the tumour cells.

(6) *Colloidal lead.*—This consists of minute particles of lead in a fluid medium, like dust in a beam of light. It is injected intravenously. It effects a chemical combination with the lecithin of the cancer cells, and the resulting compound stops the growth. Tumours surgically removed after treatment contain a large percentage of lead.

(7) *Immunity.* — Sometimes animals become immune naturally. Walker injected the serum of rats that had been repeatedly inoculated with the living cells of a rapidly-growing mouse cancer, into mice bearing well-marked tumours of the same strain; 80 per cent. of the mouse tumours were absorbed.

A considerable amount of work has been done with what might be termed "anti-cancer sera," but success can hardly be claimed for it. It is to be hoped that an anti-serum for the cure of the trouble in man will one day be produced.

The British Empire Cancer Campaign.

After Conference between representatives of the Royal Society, the Medical Research Council, and the British Empire Cancer Campaign, a Scientific Advisory Committee has been appointed as part of the organisation of the Campaign.

The following gentlemen have consented to serve:—Sir John Bland-Sutton, President of the Royal College of Surgeons; Dr. H. H. Dale, C.B.E., F.R.S., Head of the Department of Biochemistry and Pharmacology under the Medical Research Council; Sir Richard Garton, G.B.E.; Dr. F. Rowland Hopkins, F.R.S.; Sir William Dunn, Professor of Biochemistry in the University of Cambridge; Dr. Robert Knox, Director of Electrical and Radio-Therapeutical Department, Cancer Hospital; Sir William Leisham, K.C.B., K.C.M.G., F.R.S., Director-General, Army Medical Service; Professor C. J. Martin, C.M.G., F.R.S., Director of the Lister Institute of Preventive Medicine; Dr. Robert Muir, F.R.S., Professor of Pathology in the University of Glasgow; and Sir Humphry Rolleston, K.C.B., President of the Royal College of Physicians.

The formation of this scientific Advisory Committee, half the members of which are appointed jointly by the Royal Society and the Medical Research Council, marks an important step in the process of rounding off and completing the main organisation of the British Empire Cancer Campaign, whose appeal for funds to endow and subsidise research on the causes and treatment of cancer has been undertaken by the British Red Cross Society.

Since the appeal was launched in May last, it has met with a fair measure of success, and subscriptions received both from home and Empire sources already amount to more than £70,000. Though much more money is needed—for investigation of cancer, a group of morbid conditions, rather than a single disease, is so complicated and must be so widespread that a million pounds might readily be spent without suspicion of waste—it is not intended to hold up the work of the Campaign until any specified total sum has been subscribed. The British Empire Cancer Campaign proposes to begin applying its funds to the fostering of research as they are received and at the earliest possible moment. It is here that the scientific Advisory Committee will have a prominent part to play. Its functions will be:—

To devise schemes of research.

To advise and report upon all questions relating to research, including the allotment and application of funds.

Additionally, it will be closely concerned in maintaining communication between research workers all over the world—making their results and discoveries mutually available; and in keeping the public informed of the nature of the problems to be solved and the progress made towards their solution.

The distinction and knowledge of the members of the committee are in themselves a guarantee that no branch of research—and there are many which are hopeful and helpful—will be neglected, and that money devoted to encouraging any of them will be spent wisely and well. Generally speaking, the aim of the British Empire Cancer Campaign is to co-ordinate and combine all research work on cancer, to prevent overlapping, and to fill up gaps where now there are few or no workers.

By its collection of money gifts—which may be sent to Sir Arthur Stanley, G.B.E., the British Red Cross Society, 19 Berkeley Street, W.1.—more research workers can be provided and better facilities for their work; investigation can be pushed to fields as yet untouched; variations in cancer incidence in different parts of our own country and abroad may be explained; while dissemination of the knowledge thus acquired must help towards success against one of the most dreaded scourges that afflict mankind.

Royal College of Veterinary Surgeons.

OBITUARY.

KELLY, HENRY JAMES, Frognal House, Southend-on-Sea. Graduated London, 3rd July, 1879. Died 14th February, 1924. Aged 69 years.

MR. R. W. KNOWLES, Wisbech.

We regret to record the death, after a long and painful illness, of Mr. Robert William Knowles, M.R.C.V.S., senior partner in the firm of Messrs. Knowles and Knowles, of Wisbech, which took place at 7 p.m. on Monday, the 18th instant.

The deceased practitioner graduated at London in 1888.

ERRATUM.

The word "cat," reported in Mr. Hobday's remarks (on page 148) before the South Eastern Divisional Meeting at Tunbridge Wells, should have read "goat."

Foot-and-Mouth Disease.

MINISTERIAL STATEMENT:—DISCUSSION IN COMMONS COMMITTEE.

The House of Commons, in Committee on Monday last, listened to a statement by the new Minister of Agriculture (Mr. Noel Buxton) on the present position in regard to foot-and-mouth disease as it affects this country, and a discussion ensued on the resolution moved by the Minister, "providing that the limitation of £140,000 imposed by section 18 of the Diseases of Animals Act, 1894, on the moneys which may be provided by Parliament towards defraying the costs to the cattle pleuro-pneumonia account for Great Britain shall not apply to moneys so provided in either of the financial years ending March 31st, 1924, and March 31st, 1925." He said that the resolution would pave the way for a Bill to meet the costs of the present visitation of foot-and-mouth disease, which had proved very much in excess of the statutory limitation. Not long before the late Government left office they had to decide what they should do in regard to paying for the cost of the present epidemic, and they agreed that the greater part of it should be borne by the Exchequer. The present Government had decided to follow that procedure. Of the maximum sum of £140,000 which might by the Act of 1894 be provided annually to defray the cost of dealing with the diseases of animals, £40,000 had always been kept apart for swine fever, so that £100,000 was left for other diseases. The present outbreak had cost the enormous sum of £3,250,000.

The recent outbreak of foot-and-mouth disease was the most severe for the past forty years. In thirty-seven English counties and eleven Scottish counties there had been as many as 2,600 centres of outbreak, which involved the slaughter of 89,000 cattle, 300,000 sheep, 42,000 pigs, and 110 goats. The sum paid in compensation up to date was £2,851,000. Receipts on account of carcases and salvage amounted to £373,000. The cost of administration was £369,000. Since December the situation had rapidly improved. Whereas in the last week of that month there were 319 outbreaks on separate farms, in the past week there were only 63. This encouraged the hope that the disease was now well under control, and the prospect that the restrictions still in force over a wide area might be soon removed.

The Ministry of Agriculture maintained the policy of eradication by slaughter. It had been called in question by many writers, but only two years ago it was exhaustively reviewed by a Committee, of which Mr. Pretyman, formerly member for Chelmsford, was chairman, and they reported strongly in favour of its continuance. But the Ministry now thought it desirable to have a new and complete review of the situation, and for that purpose he had asked Mr. Pretyman to preside over another Committee, upon which other members of the old Committee had been nominated. This Committee would take into consideration, in view of the whole circumstances, the comparative merits of slaughter and isolation. Although in a sense the question was now *sub judice* it was important to note that this country, being an island, was capable of getting clean more quickly than other countries, and that the result of slaughter had given satisfaction even in countries like the United States, Canada, Australia, New Zealand, Norway, and Sweden. Isolation required a most elaborate organisation to work it, and even in the few instances where it had been recently adopted it had not controlled the spread of the disease, for some cases were traced to premises that had been isolated. The opinion of the majority of British agriculturists was in favour of slaughter, and in the past it had been extraordinarily successful in this country as compared with the policy of isolation adopted by other countries.

NEW COMMITTEE OF RESEARCH.

Restrictions were still being maintained in all the infected areas, and he hoped the House would approve of his action in not acceding to the demand for relaxation in the hunting districts. The thing was far too serious to play with. Turning to the question of research, he said that in 1920 a Committee was appointed under Professor Muir, Glasgow, which made an investigation into the artificial cultivation of virus, and into the visibility of the bacillus. This Committee had a laboratory at Harwich. They asked the Admiralty for a disused warship, and two lighters on which the animals lived were anchored alongside this ship. The work continued for seven months, but at the end the Committee came to the conclusion that it could not be carried any further. The number of animals was too limited, there was great difficulty in maintaining the supply of virus, and the virus, when brought from a disrance, lost its violence with great rapidity, and was invariably non-effective. The pathologists failed to discover any method of cultivating the virus, and the Committee concluded they had better stop unless research on a much bigger scale, preferably on an island, were carried out. They spent £13,000.

Organised investigation had been carried out also in France, Holland, Switzerland, and Germany, but the greatest difficulty had been met with owing to the fact that the virus was ultra-microscopic. Scientists all over the world were working on this matter of ultravisibility, and when it had been advanced foot-and-mouth and other diseases—measles, for example—would be dealt with far more effectively. Quite lately a German investigator made a very great advance, and the German Government gave him permission to discuss the matter with one of the Ministry's officials. This representative had been sent, and they were hoping for his report. He (Mr. Buxton) proposed to appoint a Committee consisting of both veterinary and human pathologists, wth instructions to frame a scheme for investigation, and then to allocate to each branch of it the particular individuals who were most suited. They had obtained the consent of the Treasury for a sum sufficient to carry on that work for some years. They could not anticipate that this very difficult inquiry would come to an end for a prolonged period. It might be several years before any adequate result could be obtained, but he thought they might hope it would lead to valuable results. (Cheers.)

POLICY OF SLAUGHTER.

Mr. E. Wood (Ripon, U.) paid a tribute to the patience of the farmers in the restricted areas, and said that as far as hunting was concerned the Minister had the good will of the hunting community behind him. In areas where restrictions on hunting had been relaxed, in nine cases out of ten it had been done at the express suggestion of the farming community in the neighbourhood. Every one welcomed the statement that there had been a considerable reduction in the number of outbreaks of foot-and-mouth

disease. He hoped that in claiming that the outbreak was well under control the right hon. gentleman was right, but it seemed that there was still a long way to go. The Minister was quite entitled to say that the balance of opinion, after careful expert inquiry, had decidedly emerged in favour of slaughter, but up to now we had been able to get through on a comparatively small cost, and it was quite evident that if this country were to be faced with the danger of a sudden recurrence of the sort of expenditure for slaughter we had had to meet in the last few months, there would be an almost overwhelming demand for a reconsideration of that policy. Therefore he attached the greatest possible importance to what the right hon. gentleman said about investigation and research. (Opposition cheers.) He welcomed the announcement of the appointment of a separate Committee to explore the field of scientific research. (Hear, hear.) He doubted whether in this or in any other field of scientific research we had done nearly enough up to now in this country. (Cheers.) On the Opposition side of the House there would be no tendency to grudge Mr. Buxton any money he needed for the prosecution of a really comprehensive inquiry. (Opposition cheers.) He did not quite follow the necessity of suspending the limit of expenditure for two years instead of one. No one could tell what would be the position this time next year. If it were necessary to remove the limit for 1924-1925, it would be easy then to ask the House to do so. That would give the House an opportunity of informing itself as to what had been the lines of administration that had made such a suspension of the limit necessary. He hoped the Government would not ask at this stage for more money than they really wanted. There was a considerable feeling amongst farmers that in some cases infection had been caused by the casual slaughterer, who, after his work, had gone away before he had been satisfactorily disinfected. It would reassure the farming community if the Minister were able to state definitely that the fullest precautions that ingenuity could suggest were taken in this respect, as in all other respects. It would be worth the Minister's while to consider whether, in order to make disinfection as complete and as satisfactory as possible, he could hold out any inducement to farmers, in the way of compensation, thoroughly to disinfect their premises by burning everything that had been in contact. He could assure the right hon. gentleman that any help they on that side of the House could give him in his efforts in this matter they would be most happy to contribute. (Cheers.)

Mr. Acland (Tiverton, L.) said he felt this question had got to be tackled on a different scale from that on which it had hitherto been dealt with. It was an enormous international problem. Half the countries of Europe were losing to the extent of millions a year from this plague, and it would be worth the while of the Government, before they decided on their scheme of research and experiment, to call together an international conference of the highest scientific authorities in the different countries to work out a joint programme. (Hear, hear.)

Captain Fitzroy (Daventry, U.) welcomed the appointment of the Committee and suggested that information was needed as to whether the policy of slaughter had been fully carried out to the satisfaction of the Ministry in all cases. To continue the policy of slaughter seemed a primitive method of dealing with the diseases of animals. Mr. Royce (Holland-with-Boston, Lab.) suggested that investigations concerning the disease should be confined to outbreaks in Great Britain, for experience showed that the nature of animal diseases in other countries was not the same as it was here. Mr. F. Martin (Aberdeen E., L.), while disclaiming any intention to make any reflection upon officials of the Ministry of Agriculture, suggested that they had been mistaken in exempting from slaughter the cattle among which the disease broke out in a pedigree herd in Aberdeenshire. The reasons were that the compensation payable for the slaughter of such stock would be a large amount, and that if the policy were generally pursued, the country might find itself without pedigree stock when the epidemic had ended. Lord C. Crichton-Stuart (Northwich, U.) said he had heard doubts expressed whether the slaughtering was done as quickly as it might be. If more men could be employed to stamp out the outbreak at the start, it might mean economy in the long run. Mr. Duffy (Whitehaven, Lab.) said that many farmers were of opinion that the disease could be dealt with by isolation and treatment. Captain Terrell (Henley, U.) supported the policy of slaughter. He asked whether it was possible to give the farm labourers who had been thrown out of work some share of the financial benefits which were to go to the farmers.

Sir H. Barnston (Eddisbury, U.) said he happened to own a small property in Cheshire of under 3,000 acres. (Ministerial cries of "Small?" and "How much more do you want?") Not one of the farms on that estate to-day possessed a single cow or pig. He could not buy milk for his household, and they were compelled to drink the horrible stuff they used to drink in France. No one who had not lived in Cheshire could realise the pitiful conditions in that county to-day.

Sir H. Cautley (East Grinstead, U.) moved an amendment to limit the application of the Government proposal to one year. He said that it was essential that the House should keep the financial control in their own hands and should have opportunities of reviewing the policy of the Ministry. Lieut.-Colonel Wheler (Faversham, U.) seconded the amendment, and asked if the Ministry of Agriculture had had under their notice any cases in which there were suspicions that the disease had been maliciously spread. Mr. W. R. Smith, Parliamentary Secretary to the Board of Agriculture (Norwich, Lab.), hoped the amendment would not be pressed. He said that the resolution enabled the Ministry to meet claims that would occur later on, and so to obviate the necessity of a fresh Bill being brought in to cover those claims.

After further discussion Mr. Buxton said he would accept the amendment. No question of principle was involved. The motion was submitted in the form in which it had been proposed solely in order to avoid having to spend a considerable part of five days upon the subject if it had to be raised again next year. The amendment was agreed to.

After further debate on the resolution as amended, Mr. W. R. Smith, replying to points raised, said the amount to be paid out of the Local Taxation Account was limited to £250,000, and might be considerably less. The policy of slaughter was adopted as the best means of stamping out the disease once it had occurred. He had been asked whether the Ministry was fully persuaded that this policy was the best one to adopt. He could only answer that there was not a responsible body connected with agriculture that did not advocate that policy. (Hear, hear.) But the question could not be allowed to remain where it was, and the Government did not intend that it should remain where it was. They were following up the work started by the late Government in the matter of scientific research, and every support would be given to any committee that was appointed so that they might make the fullest investigation into the matter with a view to finding out what was the real cause of the disease, or if that were not possible some immunising agent which would enable the disease to be kept within the narrowest possible limits.

Mr. A. M. Samuel (Farnham, U.) moved an amendment providing that the suspension of the limitation imposed should not be held to authorise the expenditure of a sum exceeding £3,000,000. Captain Terrell seconded the amendment.

On the motion of Mr. Buxton the closure was carried without a division.

The amendment was defeated by 242 to 82—Government majority, 160.

The resolution was agreed to.—*The Times.*

The Veterinary Record.

23rd February, 1924.

National Veterinary Medical Association of Great Britain and Ireland, Limited.

EDITORIAL OFFICE: 10 Gray's Inn Square, London, W.C.1.

Cheques should be made payable and all communications sent to the General Secretary at the Offices of the Association, 10 Gray's Inn Square, London, W.C.1.

ATTENDANCE AT DIVISIONAL MEETINGS.

At this period of the year, when so many of our divisions hold their annual meetings, it may not be inopportune to draw attention to the ever-present need for proper organisation. The marked difference that may be noticed between widely-separated and even neighbouring divisions in the matter of attendance at meetings, interest in the proceedings, and the subjects discussed is so noticeable that it cannot be due entirely to the besetting weakness of our profession—apathy. Apathy is the last term to be applied to some of the societies. The trouble, in our view, is largely one of organisation, and we think that with improvement in this the members will not be found wanting in that active support of their local society if they see that it is really bent on useful, interesting work which has a note of personal appeal to them individually. The work of the local secretaries is often trying and not very encouraging, but if they will only throw themselves wholeheartedly into their duties and get into touch, and keep in touch, with every one of their members, resolving that each shall be invited and encouraged to come forward and express his views and take his share in the common endeavour to advance knowledge and improve conditions for veterinary work and promote the interests of his profession, the response will not fail. We are determined that the "National" shall prosper exceedingly, but we are bound to depend upon the divisions as the foundation of our existence. If they prosper, we prosper; if they fail, we cannot thrive. There are always subjects, apart from veterinary science, which are of great local interest and which are all the better for free discussion, and there are other subjects which are of intense interest to the whole Association. We would urge upon presidents and secretaries of divisions to look well ahead and discuss matters affecting the policy of the profession before it is too late to do useful work in connection with them. Resolutions on such subjects are of the very greatest value as showing the considered opinion of districts, and we look forward to receiving many of these during this year. Such resolutions carry great weight with our Council and necessarily form the foundation of the future policy of the Association. We hope that each local society, acting as a division of this Association, will take its share, therefore, in moulding our policy and realise the responsibility which lies upon it of getting all its members to attend the meetings and take part in them, not merely as a means of spending a pleasant hour or two, but with a full knowledge that each one in attending is fulfilling a duty he owes not only to his profession but to himself.

Divisional Reports.

Eastern Counties Division.*

The autumn meeting of the Eastern Counties was held at the "Bell Hotel," Norwich, on Thursday, the 15th November, 1923, at 2-30 p.m.

There were present the following members: Colonel A. W. Wood (Cambridge), Messrs. G. T. Matthews, H. V. Low, S. E. Hill, W. H. Wortley, H. P. Standley, H. Buckingham, J. M. Currie, and W. Shipley. *Visitors*: Professor J. Basil Buxton, Messrs. H. P. Standley, Junr., and T. F. Turney. In the absence of the President, Mr. H. L. Roberts, the members present voted Mr. H. P. Standley into the Chair.

The *Minutes* of the previous meeting were taken as read.

The following gentlemen, duly proposed and seconded, were nominated for membership to the Society: Mr. W. H. Dannett (Fakenham), Professor J. B. Buxton (Cambridge), and Mr. H. P. Standley, Junr. (Norwich). The Hon. Secretary read correspondence from (*a*) Mrs. A. C. Holl, of Attleborough, thanking the Society for their expressionof sympathy and wreath on the occasion of her bereavement; (*b*) Mr. T. J. Faithfull, of Sudbury, expressing his decision to resign membership, as he was now in retirement. The Secretary had written to Mr. Faithfull asking him to reconsider his decision, and awaited his reply; (*c*) from Mr. G. H. Livesey, expressing his inability to attend this meeting, and desiring to resign his membership owing to his position as Secretary of the National V.M.A. The Secretary was instructed to write to Mr. G. H. Livesey and accept his resignation as an ordinary member, and to inform him that he was unanimously elected an honorary member of the Society.

The SECRETARY read a letter from the Royal Sanitary Institute, London, inviting the Society to send a representative to the Conference of Veterinary Officials *re* the question of tuberculosis in cattle. The Chairman emphasized the importance of sending a delegate to this conference, and proposed that the Society pay the Secretary's expenses to go to London

*Received on January 15th, 1924.

and represent them. Mr. H. BUCKINGHAM seconded this proposal, and the same was carried unanimously.

It was resolved that the next meeting, being the annual meeting, should be held at Norwich. The Chairman suggested that the Society should get someone to come and demonstrate at one of their meetings, but the Secretary remarked that Mr. J. B. Buxton had only that afternoon invited the Society to go on some future occasion to Cambridge and to visit the laboratory there. The Secretary referred to the lack of interest and courtesy on the part of some members of the division, in that they failed to attend these meetings, and, in a great many cases, did not even reply by letter. He also referred to Rule III. of the division, and was of opinion that this rule should be carried out. The Chairman put this matter to the meeting, and it was resolved that the Secretary should be instructed to write to those officials who were at fault and draw their attention to Rule III., and to inform them that this meeting considered they should pay the fine. This resolution was carried unanimously, one member present remarking that it was a slur upon the division that these officials were absent.

Owing to the belated appearance of the essayist, the Chairman presented a specimen cystic calculus removed from a dog in August. The breed was that of a fox terrier. The specimen was a remarkably good one, being quite the size of a duck's egg. Mr. H. Buckingham introduced a very interesting case of urethral calculus in a dog, which, on *post-mortem* examination, revealed also sarcoma of the bladder.

Mr. WILKINSON, of Martham, introduced by letter an interesting and peculiar case of necrotic dermatitis in pigs, and asked for an explanation of the cause. The members expressed interest but could not throw light on the subject. Professor J. B. BUXTON said that cases had been recorded similar to that of Mr. Wilkinson, but no causal organisms had been demonstrated.

The CHAIRMAN introduced the question of unqualified veterinary attendance on the horses of railway companies. After some little discussion, the meeting passed a resolution, proposed by Mr. WORTLEY, seconded by Mr. H. V. LOW, that Mr. H. P. Standley, representing the division, should wait on the directors of the companies concerned, for the purpose of going into the matter..

MR. LOW'S CASES.

Mr. HARRY V. LOW then read a paper in which he related, in the following words, some of the unusual cases that have come under his observation in the course of his professional life.

(1) An Aberdeen terrier, with red spots all over his skin (such as are seen in human beings with scarlet fever), would not eat or drink, was ill and bad tempered, and, if food was forced upon him, would go off in a dead faint, and remain unconscious for three or four minutes. For ten days he had no nourishment whatever. He was given febrifuges and bismuth, mixed in dissolved Brand's Essence of Beef, in small quantities, five or six times a day *per rectum*. To this operation, he did not object. After ten days he became a little brighter, and on the eleventh day I took him the skin of a bloater, which he ate. I then had another bloater cooked for him, and he ate that also. From this time he gradually recovered, and was sent home quite cured.

(2) The Norwich Stud Hounds had fourteen bitches in whelp in 1922. Eleven died between February and August. I had no opportunity of seeing the first seven, but I made a *post-mortem* on the eighth, and could not find anything to account for death. The bitches were in splendid condition, and had roamed about as they liked up to within ten days of being due to whelp, when they began to get listless. They lost flesh very rapidly, and became emaciated. They lay about and died quietly without a struggle. I made *post-mortem* examinations, but could find nothing to account for death. The R.V.C. and the Ministry of Agriculture, to both of which I sent a carcase, made the same report. These bitches were not all served by the same dog, but all by different sires, and the puppies were well developed within three or four days of being born. During the time of this epidemic the bitches were removed from the kennels at Brooke to the kennels at Wymondham, in the hope that the trouble might be stopped, but it went on just the same. So far as I remember, out of thirteen bitches in whelp only one carried her puppies full time, and brought up about eight. Another carried her puppies full time, and had three, but they all died.

(3) In December, 1917, I was called to a farm, and found twenty-seven store pigs dead, in loose boxes, looking just as if they were asleep, with their noses on each other's backs, quite in a natural way. *Post-mortem* examination showed no lesions. The stomachs were full of boiled beet and a little meal, on which they had been fed for some time and had done well. Hitherto, this had been given cold, but as frosty weather had set in two days before my visit, the food was given hot. The twenty-seven pigs were fed on warm food, and shortly afterwards were found dead. The food by this time had cooled, and ninety-six other pigs received the same food without ill-effect. I attributed death to ptomaine poisoning, but wondered why all the pigs did not die. I had a very similar case at the Cavalry Barracks, where ten pigs died under the same circumstances. It took about twenty minutes for them to die.

(4) *Diagnosis of Swine Fever.*—I visited a farm and found eight store pigs dead and about twenty looking very unhappy. I made eight *post-mortems*, and found acute congestion of the lungs; worms; tuberculosis of lungs, and pleurisy in different pigs. Eleven days later I made a second visit, and found fourteen more pigs dead. I found, upon making ten more *post-mortems*, lesions of swine fever in only five cases out of twenty-two. There were fifty-eight alive on the first visit, of which about twenty were ailing, and fifty-three alive on the second visit, of which twenty-three were ailing. Although these ailing pigs did not show definite symptoms of swine

fever, they looked a very poor lot. Of the twenty-three, nineteen had apparently recovered in about three months from my first visit. On another occasion I found twelve stores alive and apparently well, and one dead. *Post-mortem* showed acute congestion of the lungs. Nine days after two more died from the same cause. On a later visit the remaining ten did not appear so well. In both these cases there were no suspicions of swine fever lesions, the stomachs and bowels being perfectly normal. Two days later one store pig died, and I found swine fever lesions. It was eleven days since my first visit before the lesions developed. I understand one of the Inspectors of the Ministry visited the same farm four days before my first visit without finding any suspicion of swine fever. From these two cases, it seems to me that in very acute cases of swine fever the pigs die before the ulceration or diphtheritic deposits have time to form. We should, therefore, be very guarded in giving a very definite opinion upon swine fever.

(5) I have had some extraordinary cases of beet poisoning in cattle. I was called to a farm where there were several cows ill and three calves dead. The owner had given them beet off another farm, and afterwards they went off milk, got down, and could not get up. The calves fell down dead twenty minutes after being fed, but the cows recovered. A *post-mortem* disclosed no cause of death.

(6) On one farm I removed eight bull-dog calves from heifers. They were little, short calves about 18 inches high, with legs about 2 inches long, faces perfectly flat, big dome-heads, and invariably the intestines were outside the bodies. In two cases the intestines were absolutely disconnected. I never found this except in Dexter herds. Dexter breeders have gone into the subject, but have come to no conclusion. A farmer told me he never got bull-dog calves when he used a young bull.

(7) *Anthrax.*—I have had several extraordinary cases of anthrax. A white bullock, noticed by the owner to be ill, was removed to a loose box. treated with salts and found dead a week after. The case was reported, and certified to be anthrax.

A cow was observed to be off her feed and gave less milk at night. Next morning her appetite returned, and she gave more milk, and was turned out with the other cows. At night she was not so well, and I was sent for. On arrival I found her dead, with quite a large pool of blood on the floor from her anus : blood of an arterial colour. I thought, " This cannot be anthrax," but considered it advisable to report the case. I returned next morning, took specimens, and forwarded them to the Ministry, and the case was confirmed as anthrax. From the extraordinary amount of blood one would have jumped to the conclusion that it was internal hæmorrhage, but such was not the case, although the mucous membranes in both cases were quite white.

(8) A Jersey cow, in May, 1919, went down with milk fever about three days before she calved. She afterwards improved and did very well. On November 4th, 1919, she was found in a comatose state with distinct symptoms of milk fever. This sort of thing went on several times before calving, and finally the owner sold her.

(9) On another occasion a cow passed a very small calf. I examined her and could not find anything else, but four days afterwards she was dead, and I found she had a ruptured womb, and in her intestines a calf which had probably been there some time.

(10) *Examination of Horses for Soundness.*—My father, some years ago, passed a horse as sound and received a letter from the owner saying it was a " Quidder." On further examination of the horse, he found a piece of wood in its palate : on this being removed the horse was able to feed. In two cases he found horses blind in one eye, although both eyes looked perfectly normal. He had a case of a " Shiverer," which shivered after he had given it cold water to drink.

(11) *Simple Accidents.*—A bay gelding had a swelling on the fore shoulder. My father lanced it, and on putting his finger into the hole felt something sharp, which turned out to be a nine-inch knitting needle.

A hackney mare, pulled up suddenly to avoid knocking down a boy, fractured the off-fore fetlock into about fifty pieces. Another cob, pulled up, fractured its off-fore fetlock.

A labourer was carting roots when the fork fell off ; the man picked it up and caught the handle against the gate-post, with the result that the prongs ran into the horse behind the elbow, and he died in five minutes.

I have had two curious cases of broken backs. A horse running in a point-to-point race fell. He got up, jumped two fences and refused the third. He was walked to the station and fell on the road, but got up and eventually walked home after a railway journey. He died early next morning. *Post-mortem* showed that he had a complete fracture in the lumbar region, and had punctured the aorta. It was rather extraordinary how he got home in such a condition. A black mare that hunted with the hounds fell over a small ditch. She rose and jumped another fence, and got into the road. I found her lame on the near hind limb, and heard a distinct dull noise in the hind quarter. She was walked home, and two days afterwards was in such pain that she was killed. *Post-mortem* showed fractured back. Some years ago my father had a black mare who would go perfectly sound for three or four miles ; then go slightly lame. The lameness would increase until she was absolutely stopped. After a rest she would go on again for several miles, or it might be for only one mile. This peculiar lameness would come on periodically.

(12) *Tetanin.*—I have for some time inoculated horses, which have met with injuries, with tetanin, and since having adopted this practice I have had up to now only two cases of tetanus following the inoculation, and in both cases they recovered. One was a mare with a severe injury to the fetlock joint. I treated it antiseptically and inoculated it once. The wound did exceptionally well, and I made, as I

thought, my final visit, when I found the mare suffering from tetanus. After two or three weeks the mare had apparently recovered. In another case a cart mare had an injury to the foot from a nail. She was very lame and full of pain. On exploring I found a quantity of pus. I dressed the wound and inoculated. About eight days after my first visit I noticed that her tail was considerably raised, and she was quite stiff in all her limbs, and the membrane half covered the eye when the head was raised. The jaw muscles did not appear to be affected much, and she could eat her food well. I inoculated again and dressed the foot. She had in all three or four inoculations of tetanin, and went to work after being turned out to grass for about a week. Complete recovery ensued. I have not had much success with tetanin as a curative when the patient has not received a dose before the symptoms have made an appearance.

Mr. WORTLEY thanked Mr. Low for his paper, and remarked that he knew of about fifteen to twenty cases of "Beet-poisoning." The animals affected staggered about; got down, and were unable to get up, etc. He usually found that treatment with saline purgatives was very satisfactory. He pointed out that animals were poisoned as much from eating the "tops" of the beet as from the "roots." He remembered that three beasts that had eaten the tops off some beet in a field soon became ill; he gave them a good drench, and they got all right again after a few hours.

The CHAIRMAN related a local case in which a man responsible for the feeding of large numbers of beasts on one occasion, it being a holiday time, gave the animals a double portion of beet at one time so that he should not have to go back and feed them any more that day. The beasts were practically all taken ill, and several died or were found dead the next day. When Mr. Standley was called in he was at a loss, not knowing the circumstances, to ascertain the cause of the illness and death, but ultimately diagnosed beet-poisoning in accordance with the history, and treatment with saline purgatives proved successful.

A hearty vote of thanks to the Chairman concluded the business of the meeting.

W. SHIPLEY,
Hon. Secretary.

Lincolnshire and District Division.*

The autumn meeting of the Lincolnshire and District Division was held at Lincoln on Thursday, October 11th.

There were present: Mr. T. Hicks (Sleaford), President, and Messrs. C. Hartley (Lincoln), G. Lockwood (Peterboro), H. Caulton Reeks (Spalding), H. Walpole (Metheringham), and W. W. Lang (Brigg), Hon. Secretary and Treasurer.

Visitors.—Mr. H. Caulton Reeks, Junr., and Dr. J. C. Wallace. Letters of apology for non-attendance were received from Professor F. T. G. Hobday and Messrs. F. L. Gooch, T. B. Bindloss, C. W. Townsend, J. Caldwell, T. Runciman, H. P. Standley, W. W. Grasby, W. A. Dickinson, J. P. Burr and C. Burston. Other letters in reply to invitations to attend the meeting were received. Mr. F. H. Jenkins, of North Thoresby, wrote that he was unable to attend, and mentioned that he had recently lost his wife. The Secretary said he wrote to Mr. Jenkins and expressed the sincere sympathy of the division.

The meeting concurred.

THE PLACES OF MEETING.

The members proceeded to discuss the matter of dates and places of the meetings of the division; this matter having been referred to them by the June meeting at Peterboro'.

The PRESIDENT said the first question was whether they should have two meetings or three. In the ordinary way, the next meeting, which was the annual meeting, would be at Grantham. The meetings at Grantham were always badly attended.

The SECRETARY felt that perhaps the general meeting was not interesting enough.

Mr. HUNTLEY said that if they got down to two meetings, it would soon be reduced to none at all. It would be best to circularise members saying that they had decided to continue the meetings at Peterboro' and Lincoln, and, if they suggested any other town than Grantham for the February meeting, they would be glad of expressions of opinion.

Mr. Walpole asked if any town was as accessible as Grantham.

Several members expressed the opinion that Grantham was the most central place of all, when served by railways.

Mr. Hartley asked if it would be better to change the Grantham meeting to Peterboro'. He did not think the date made any difference to the Lincoln meeting; the East Lincs. men would come if they wanted to.

The President said they had had two "meetings" at Grantham with no Grantham members present. They came to the conclusion that Thursday was the wrong day for Peterboro', as it was early closing day.

Mr. HARTLEY gave notice that he would move that the meetings at Grantham and Peterboro' be on the second Wednesday in February and June respectively.

The SECRETARY suggested that they should fix the day of the following meeting at the next meeting. They could then ask the opinion of local men.

It was agreed that the resolution suggested by Mr. Hartley be put on the agenda for the next meeting.

OTHER ALTERATIONS.

It was mentioned that several alterations in the rules were necessary, and it was agreed to put them on the next agenda. The first referred to the alteration of the name of the Association to "The Lincolnshire and District Division of the Veterinary Medical Association."

* Received on January 8th, 1924.

Another notice was to the effect that the funds of the Association be put in the branch of the Midland Bank which was most convenient to the Secretary for the time being, as a separate Association account.

The Secretary's Accident.

Mr. Bindloss referred in his letter to the recent accident in which the Hon. Secretary, Mrs. Lang, and their little boy received injuries. The writer hoped that the meeting would express their sympathy, and that the victims were making a good recovery. (The accident was reported in the *Record*.)

The President said he had pleasure in proposing this. They were all very sorry for Mr. and Mrs. Lang, but, while the accident was a bad one, it was very fortunate that the results were not even more serious.

Mr. Lockwood seconded, and the resolution having been carried,

The Secretary replied. Both he and his wife were making an excellent recovery, though Mrs. Lang was not yet home again. He should like to take that opportunity (Mr. Lang continued) of thanking all those members of the profession, and there were a great number, who wrote and sympathised with them in their misfortune. Also he was very grateful for professional offers of assistance in running his practice. It was very gratifying to find that they had so many good friends. Major Hobday put himself to a great inconvenience to call upon him in hospital, and he was very much obliged.

Subscription.

The Secretary said it had recently been proposed to raise their subscription of £2 2s. to the Victoria Benevolent Fund to £3 3s.

Mr. Hartley seconded, and the resolution was carried.

New Members.—The following new members, nominated at the last meeting, were unanimously elected: Mr. T. Knowles (Wisbech), Mr. A. Williams (Ramsey), Mr. A. J. Hines (Grimsby), and Mr. H. P. Standley (Norwich).

The President nominated Mr. H. Caulton Reeks, Junr., as a member. They were all pleased to see that he had qualified. This made three generations in one family in the profession, which was probably unique.

The Secretary said he should like to receive more names for nomination, and he hoped members would tell him of likely names. The Register was not to be relied upon, many having left the district.

Several names were mentioned to the Secretary, and he promised to write.

Service on Juries.

Mr. Lockwood brought forward the question of the serving of veterinary surgeons on juries. Until recently, he said, he thought they were exempt, but now found it was not so. The Mid-West and South Wales Division had passed a resolution:

> That this Association is of opinion that the time has arrived that the Veterinary Association of Great Britain and Ireland should urge the College to make further effort to secure the exemption of veterinary surgeons from service on juries.

He thought they should pass a similar resolution and forward it to the proper quarter.

Mr. Walpole said he had appealed from service. They would not grant the appeal, but he was never called.

Mr. Huntley said he was exempt but it was only because he was an officer serving with the territorials.

Mr. Lockwood informed the meeting that he appealed from service, but the Clerk of the Peace wrote back that his reasons were not sufficient, and he would have to appear. He thought they should support the resolution, and moved that they do so, and send it to the National. A Bill was brought forward once before, but support was not strong enough, and it was thrown out. The refusal cast a slur over their *locus standi*, and that was important.

The Chairman said they must all see that was a one-man practice: it was very important.

Mr. Hartley seconded the resolution, which was carried.

General Business.

The President called attention to a method of treatment of Johne's disease of which he had been told recently. He gave the formula, and said it was stated to have proved very successful. The ingredients were 6 dr. napthaline, and 2 ozs. turpentine, in an 8 oz. bottle, filled up with cod liver oil. A fourth part should be given once a day.

Mr. Hartley said he had tried it in one case, and thought a cure had been effected, but he was disappointed to find it was not so.

The Secretary, in reply to a question, said it was quite feasible to pass a tube through the nostril of a cow in order to evacuate the contents of the rumen. It might take a long time, but it was always worth it. There was no absorption from the rumen.

Mr. Lockwood feared he would not have the requisite patience. He should have thought, moreover, that the solid matter would have blocked the tube.

Mr. Lang said it was only necessary to pump in more liquid.

Mr. Hartley remarked that he tried it with a cow at the Lincoln Show. The one he treated recovered, but the other did not. He put the tube in before about a thousand people, but when he finished there was only the cowman and himself, and one man was "throwing up" in one corner of the field, and the cow in the other. (Laughter.)

Mr. Lockwood mentioned the case of a greyhound bitch which gave birth to several bad or dead puppies, and eight days later to a perfectly good healthy puppy.

Mr. Lang mentioned a similar case with regard to a sow. This gave birth to several dead pigs, and some days later to nine good ones.

Several other cases were mentioned by other members, after which the meeting closed.

W. W. Lang,
Hon. Secretary.

West of Scotland Division.*

Annual Meeting.

The annual meeting of the West of Scotland Division of the N.V.M.A. was held in the Glasgow Veterinary College, 83 Buccleuch Street, Glasgow, on Thursday, 17th January, 1924, at 3 p.m. The President (Mr. Hugh Begg) was in the chair, and the following members were present: Messrs. Begg, Macfarlane, Whitehouse, Brown, Wilson (Lanark), Wilson (Glasgow), Meihele, Mitchell, Orr, Roy, Campbell, Macgregor, Pottie, Junr. (Greenock) and Stark. Apologies for absence were received from Messrs. Gaiger, Robb, Mason, Gardner and the Secretary, Mr. Weir.

In the absence of the Secretary, Mr. James Macfarlane, Glasgow, acted *pro. tem.*

A resignation was read from Mr. James F. Taylor, Cathkin. It was decided, meantime, not to accept this, and Messrs. Campbell and Weir were deputed to interview Mr. Taylor to try to influence him to reconsider his decision.

New Member.—Mr. Stark, Wishaw, was enrolled.

Member proposed.—Professor Rennie, proposed by Professor Whitehouse, and seconded by Mr. Begg.

The treasurer's report was read, and showed a credit balance of £25 11s. 8d. standing. The statement having been examined and found correct by the auditors, was passed unanimously. The Secretary reported that only twenty-nine members had paid their annual subscriptions, which showed a falling off in numbers, and he suggested that the members present should do their utmost to get new members, and to stir up the lapsed ones.

The Secretary was instructed to notify those in arrears.

The office bearers for the ensuing year were then elected, namely:—

President: Mr. Hugh Begg.

Vice-Presidents: Principal Whitehouse and Mr. William Roy.

Hon. Secretary and Treasurer: Mr. George W. Weir.

Representatives to Council of N.V.M.A.: Messrs. Begg and Thomas Dalling.

Auditors: Messrs. Macfarlane and Mitchell.

The Secretary then intimated that he had been asked to send the names of six members to form part of the Provisional Committee for the annual meeting to be held in Aberdeen this summer. He had, on his own initiative, sent six names, and his action in this matter was approved by the meeting. It was brought to the notice of the meeting that February 16th was fixed as the date of the joint meeting with the Scottish Metropolitan Division.

A Committee comprising the following was elected for the purpose of making the necessary arrangements: Messrs. Whitehouse, Macfarlane, Robb, Roy, Mitchell, and Weir.

The Secretary read a letter from the Central Division N.V.M.A. dealing with their resolution as to the methods of the Ministry of Agriculture and Fisheries in handling the outbreak of foot-and-mouth disease, and it was decided to send the following resolution to the Ministry of Agriculture and the local press:—

"That we, the members of the West of Scotland Division of the N.V.M.A., assembled at the Glasgow Veterinary College to-day, 17th January, 1924, heartily endorse the policy which the Ministry of Agriculture and Fisheries is pursuing in the control of the present outbreak of foot-and-mouth disease."

The Secretary then drew attention to the very unfair way in which the Glasgow Veterinary College had been dealt with by the Scottish Board of Agriculture in allocating £3,500 to the Royal (Dick) Veterinary College, and only £100 to Glasgow.

After some discussion the meeting unanimously decided to send the following resolution to the Secretary for Scotland, the Governors of the Glasgow Veterinary College and the local press:—

"That we, the members of the West of Scotland Division of the N.V.M.A., assembled at the Glasgow Veterinary College to-day, 17th January, 1924, view with dismay the invidious distinction which the Scottish Board of Agriculture has made between the Edinburgh and the Glasgow Veterinary Colleges in their recent allocation of £3,500 to the former and only £100 to the latter.

"We make our most serious protest against such treatment and hereby claim for the Glasgow College a degree of financial support more nearly equal to that granted to the Royal (Dick) Veterinary College."

This was proposed by Mr. D. Campbell and seconded by Mr. A. Mitchell.

Mr. Macfarlane then read Mr. J. Huxley Mason's paper on "Cancer," which was very favourably received, but owing to shortage of time the discussion was postponed till the March meeting, and the Secretary was instructed to write to Mr. Mason a letter of thanks.

(Mr. Mason's paper receives separate publication.—Ed.).

A vote of thanks to the Chair brought the meeting to a close.

G. W. Weir,
Hon. Secretary.

* Received on January 30th, 1924.

North Wales Division.*

A meeting of this Division was held at the Cartmell Hotel, Colwyn Bay, on September 18th, 1923. The following members were present: Messrs. Wynn Lloyd (President), Carnarvon; Trevor Williams, Llangefni; Owen Thomas, Llanerchymedd; J. E. Mills, Caersws; W. Hale Savage, Bangor; G. J. Roberts, Pwllheli; C. W. Cartwright, Dyserth; H. Llewelyn Jones, Denbigh; R. P. Jones, Ruthin; and J. H. Wynne, Denbigh.

* Received on February 1st, 1924.

Visitors: Dr. Travis (County M.O.H., Llandudno), Mr. W. F. Aston, Wrexham, and H. V. Hughes, Liverpool.

Apologies for absence were received from Messrs. Richard Jones, Towyn (Hon. Treasurer); Matthews, Llanfair; P. G. Booth, Colwyn Bay.

ELECTION OF OFFICERS.

The following were elected officers for the coming year:—

President: Mr. E. P. Edwards, Mold.
Treasurer: Mr. Richard Jones (re-elected).
Secretary: J. H. Wynne.
The *Vice-Presidents* were re-elected, with the addition of Mr. Hale Savage.

The PRESIDENT (Mr. Wynn Lloyd) welcomed Dr. Travis, and expressed the wish that the two branches of the Medical Profession should be brought closer together. They would both benefit by closer co-operation.

Referring to the Milk and Dairies Act, he said that, as it stood at present, it accomplished nothing, except that it brought up the price of milk, especially to the poorer classes, who required more looking after than the rich.

There was difficulty in proving knowledge on the part of the owner of a tuberculous cow. He thought that compensation should be given to farmers for diseased cattle, thus enabling them to be slaughtered, and the disease prevented from spreading.

Dr. TRAVIS thanked the Association for inviting him to open the discussion on this important subject of "Purer and Cleaner Milk." He congratulated the writer of the paper (Mr. J. H. Wynne). It was very important that everything should be done to ensure the best possible supply of milk. He objected to the manner in which milk cans were handled at the stations. Porters were very careless at times. At Llandudno 127 samples of milk had been examined in eight years, and only three were found to contain tubercle bacilli. That meant that only one in forty samples taken there were tuberculous. He agreed that much good might result from closer co-operation.

Mr. TREVOR WILLIAMS thought local authorities should give financial aid by paying the veterinary inspector instead of placing the burden on the owner of the cattle, as was the case under the 1922 Act and the Special Designations Order. He regretted that the Tuberculosis Order had been suspended.

Mr. R. P. JONES thought the Association should pass a resolution in favour of the re-introduction of the Order, and he advocated propaganda work. The public wanted educating, he thought.

Mr. H. LLEWELYN JONES said that most "branches" had damned the Act. That was not the way to produce better milk. The fact remained that they did not approve of the Act as a practical measure.

Mr. MILLS expressed the opinion that an Amended Act was badly needed. He, however, did not condemn the measure, which was a move in the right direction.

Mr. H. V. HUGHES thought the Act ought to be encouraged, and he favoured passing a resolution to that effect.

Mr. ASTON advocated a scheme of inspection of farms on the "card system."

Mr. J. ROBERTS was afraid that inspection could not do very much good in country districts. There were difficulties with which to contend. There was very little wet milking in South Carnarvonshire.

The PRESIDENT produced for inspection an "Improved dust-proof Milking Can," manufactured by discharged soldiers at Carnarvon. The milk had to pass through three different meshes.

Several members spoke in favour of this utensil.

Mr. J. H. WYNNE, replying to the discussion, said that the weak point of the Milk and Dairies Act was that it did not lessen the number of tuberculous animals. It would be a great step forward if they could get the Tuberculosis Order again enforced.

He thought that all Medical Officers of Health should have milk examined bacteriologically as well as chemically, and if any sign of tuberculosis were found, an effort should immediately be made to trace and segregate the cow.

The samples taken at Llandudno were exceptionally free from tuberculosis. The proportion of tuberculous milk in samples of mixed milk taken in seven of the largest towns in England in 1920 and 1921 worked out at between six and seven per cent. In Denbighshire (the western division of the county) during the last three months the Food and Drugs Inspector had taken twenty-five samples of milk, thirteen, or over 50 per cent., of which were found adulterated. This milk was only subjected to chemical analysis. It should be bacteriologically examined as well.

He thought there should be a veterinary officer appointed in each county and county borough to take steps to safeguard the public health as affected by milk and meat. More care should be taken in the handling of milk.

Dealing with the grading of milk, he thought the principle was good. He did not see why bringing up one quality should make another quality poorer, except, of course, that this might happen through tuberculous cows removed from places where graded milk was produced finding their way to places where there was no supervision. There was danger here. It was not so difficult to produce Grade A milk as was supposed by many.

He quite agreed that the Tuberculosis Order should be re-introduced.

A very hearty vote of thanks was accorded to Dr. Travis for attending the meeting and opening the discussion.

Mr. Wynn Lloyd and Mr. Savage were also thanked for the able way in which they had carried out their duties during their term of office.

Mr. Trevor Williams, J.P., invited the society to hold its next meeting at Llangefni, and it was decided to do so on Friday, March 14th, 1924.

J. H. WYNNE,
Hon. Sec.

Derbyshire Division.

Debate on Foot-and-Mouth Policy.

(Concluded.)

In reply to Mr. Marrison, Mr. Heather expressed the opinion that it was the excreta that was affected.

Major Bagshaw said he was taught, long ago, that all the secretions and excretions from cattle suffering from foot-and-mouth disease were highly infectious. It had been said that afternoon by a gentleman of wide experience that cattle were most dangerous in their incubation or undiscovered stage, so far as contagion went. That being so, it appeared there was a considerable leakage in the way churns were dealt with, going to and at the dairy. In his district the churns were placed by the road side and picked up by motor lorries. On the rough roads the milk was jolted out and ran down the side of the cans. At the factory the cans, in the majority of cases, were cleaned inside by steam, but there was no effective cleansing of the outsides, nor of the insides of the lorries, and the churns went back to other farms than those from which they came. Neither the Ministry of Agriculture nor the police had the power to stop milk going away, but that responsibility lay with the Medical Officer of Health. He took it that if the cattle on a farm were infected the milk would be infected.

Mr. Heather: You cannot prove that.

Major Bagshaw went on to say that he thought the milk ought to be stopped from being sent away immediately an outbreak was discovered. It would be easy to compensate the farmer if a suspected case were not proved.

In reply to Mr. Heather, Major Bagshaw informed the meeting that in the Netherlands it had been proved in several cases, where the milk had gone to the factory, and the whey sent back to farmers for feed without being pasteurised, that many cases had resulted in foot-and-mouth disease on the farms. In one outbreak the milk was sent to the factory and was pasteurised—at least the bye-products were—before being sent out, and no further outbreak took place. In the Netherlands it was now taken for granted that the milk was infectious. Mr. Heather had spoken about treating with a form of internal antiseptic. If that were efficacious, why should it not be done on a larger scale, so as to make the blood obnoxious or objectionable to the germs? Would not the spread of the disease be checked in that way and so do good in these hard times?

Mr. Heather said Major Bagshaw had very wisely drawn attention to the question of churns. They should be disinfected outside as well as inside, and the lorries disinfected inside also. He thought that even more important than not allowing the milk to go away. Horses were said to be immune from the disease, but their feet and the carts ought to be dealt with before leaving an infected farm and going on the high road. In his opinion the disease was largely spread by trespassers—people going on to infected farms and off again—as the excreta of cattle was the secret of the whole thing. Till the mucus stopped coming from cattle that had had the disease (a period of four months), they should be kept isolated, and the animals should then be disinfected outside. If outbreaks were dealt with by the local authorities, they would get a better procedure than at the present time, and the Medical Officer of Health would be in touch with the other authorities.

Mr. Marrison expressed the opinion that local authorities might, with advantage, work in closer co-operation with the Ministry, both with reference to milk and the inspection of animals. He could not understand why it was necessary for the Ministry of Agriculture to inspect animals when a farmer applied for a removal license; for those inspectors could very easily carry the infection to a place where there had been none before. It should be sufficient to make the farmer sign a declaration that the beasts on his farm were free from infection, and if the farmer had knowingly made a wrong declaration, send him to gaol. If it was necessary to have an inspection he suggested that it should be carried out by the local veterinary officer. With that, the burning of all refuse, and the extermination of rats, a great deal could be done towards stopping the spread of the disease.

The President said the case of infection from milk was a very difficult one. It was said that, before foot-and-mouth disease could be traced (i.e., in the incubation stage), the blood and milk were infected. Immediately the disease developed, and the vesicles formed and were ruptured, the virus was not found in the milk or blood. He had been told by farmers that in the old days, when they had foot-and-mouth disease they fed the milk to the pigs, which did not develop the disease, but, on the other hand, did well. No one more than himself would like to carry out investigations, but he would not care to do it at the expense of the whole neighbourhood. They were not the people to investigate the disease, in view of the way it spread at present. If it was to be treated, it must be done on an island or at sea, where the virus could not be carried about.

At the conclusion of the discussion, a resolution was passed supporting the Ministry's policy of slaughter. The members were then entertained to a most excellent tea by the President.

O. V. Gunning, *Hon. Secretary.*

A Correction.

On page 132, column 2, paragraph 2, it was incorrectly stated in the N.V.M.A. Council meeting report that Mr. S. H. Slocock intimated his willingness to defray the expenses in connection with the exhibition in the Board Room at 10 Gray's Inn Square, of a portrait of Dr. O. C. Bradley, of Edinburgh. The offer, which was accepted, was made in connection with a portrait of the late Mr. C. S. Hunting, as a companion portrait to that of Dr. Bradley, which was already forthcoming.

Notes and News.

The Editor will be glad to receive items of professional interest in these columns

Diary of Events.

March 14th—Meeting of the North Wales Division at Llangefni.

Last week the Lancashire Division held its Annual General Meeting at Manchester, followed by the Annual Dinner, to which, in accordance with an old custom, many local guests were invited. Mr. Joseph Whitehead, F.R.C.V.S., D.V.S.M., the President, took the chair at both functions, and had as his principal guests the Mayor and Mayoress of Salford, of which County Borough he is the veterinary inspector. Considering the fact that the "Lancashire" is one of our largest divisions and a very old-established society, it was disappointing that Mr. Whitehead should have had such a meagre attendance at the meeting, where he was called upon to give his presidential address to no more than nine of his fellow members. The Lancashire division must look to its laurels if it is not to lose the proud position it has held in the past.

* * * *

The presidential address was an excellent and thoughtful exposition of Mr. Whitehead's views on veterinary public health, and it will bear careful reading and consideration. Veterinary State medicine and public health work is bound to increase greatly in importance and occupy more and more of the time and attention of our profession. With this steady increase in public health work, the work of the National becomes increasingly important, and our Association through its Veterinary Inspectors and Public Health Committee, is the link between the various men engaged in this work, and we hope it will be the mouthpiece of all.

* * * *

The Annual Dinner was robbed of some of its importance by the lack of support from so many members. On the other hand, those who came brought many guests, and it was quite a large gathering which sat at table. The outstanding speech of the evening was that of the M.O.H. of Manchester, Dr. Veitch Clark. His generous remarks in proposing the toast of the R.C.V.S. will be keenly appreciated by all our members. Mrs. Urmson, J.P., of Bolton, responded for the ladies in a speech which showed the interest she takes in public work, and especially in child-welfare. The toast of the "National" was in the hands of Alderman Hornby, but unfortunately he was not well acquainted with our work and organisation, and it was left to our President, Mr. Dawes, to tell of our activities and the past work of our Lancashire Division.

(Continued at foot of next column.)

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

"An Historical Note."

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—We are all much indebted to Major Pryer for his care in reporting the result of his investigations as to the tragic circumstances of the deaths of Veterinary Surgeons John Phillips and Charles John Dawson. Major Pryer's assumption as to the qualification is quite correct. John Phillips graduated from the London College on December 15th, 1831, and Charles John Dawson graduated on May 7th, 1836, also from London.—Yours faithfully,

FRED BULLOCK, *Registrar.*

Royal College of Veterinary Surgeons,
10 Red Lion Square, London, W.C.1.
18*th February*, 1924.

The Word "Veterinary."

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I was much interested by Mr. W. Scott's letter in a recent *Record*, wherein he assailed the present appellation by which our members are known. I am in hearty agreement with him that the word "veterinary" might, with great advantage, be dropped for all time. The reasons he gives carry great weight with me, but if there were no other reason than the ease with which it can be abbreviated to "vet.," this would be amply sufficient, in my mind, to justify its future rejection. It is bad enough to be vulgarly alluded to as the "vet"; worse, when the stableman says "the *vit.*"; but worse than ever when we find our own members using it, and thus educating the public to follow their example. Nobody but the most familiar would speak of the "*doc.*"; which brings me to Mr. Scott's plea that we should receive the courtesy title of doctor. A man can only claim this title—according to the dictionary—if he is a man of science or professional acquirements; or one licensed to practise medicine.

Are not members of the R.C.V.S. equally qualified and entitled to receive a like courtesy? The American citizen

(Continued from previous column.)

The "Wooldridge" Challenge Cup.

LONDON COLLEGE SUCCESS.

The London fifteen gained a well-merited triumph in this interesting competition, wherein the London and Dublin Colleges have an annual struggle for supremacy in the handling code, by defeating their rivals by four points to nil at Lansdowne Road, Dublin, on February 16th. The game produced a great struggle between the packs, but the back divisions were not prominent, and the scoring was confined to a fine goal dropped by Rhodes early in the second half.

Mr. L. M. Magee, the old Irish international scrum half refereed, and the teams were:—Dublin Veterinary College—J. Hannigan, D. L. O'Brien, J. H. Best, C. N. Porter, R. W. Cassells, W. H. Glanville, N. Clarke (captain), T. B. McClure, G. E. Clarke, C. P. Downes, V. G. Hinds, H. F. Clarke, J. E. Rosborough, J. F. Taylor, E. A. Cromer.

London Veterinary College—W. F. Howell, G. K. Fenn-Smith, J. W. Bruford, C. S. Xuto, H. J. Hodgman, H. W. Richards, W. Rhodes, V. B. Jones, G. J. De Wet, S. J. Edwards, E. Patterson, C. Elphicke, E. R. Wilkinson, T. G. Chamberlain, K. F. Quin.

Six games in all have been played, of which both London and Dublin have won two, the remaining two being drawn.

Professor G. H. Wooldridge accompanied the visitors, and others attending included Professors Browne, Craig, O'Connor and Kehoe.

The London team were entertained with traditional Irish hospitality at Clery's Restaurant, with a subsequent visit to the Theatre Royal.

has long ago realised this, and alludes to his veterinary surgeon as "the doctor." Sir W. Hale-White must have had some good (if unrevealed) reason in his mind for "purposely omitting" the word veterinary. After all, the title of veterinary surgeon is rather lengthy and unwieldy if it has to be repeated many times in conversation; and further, "veterinary" seems to be misspelt by quite 40 per cent. of people, including many who ought to know better. I would like to see the whole term scrapped, and a shorter and more scientific one substituted.

Finding the substitute, however, is no easy task. In Germany the V.S. has the concise and intelligent appellation of Tierarzt (tier meaning animal, and arzt—surgeon). In France he is called the Vétérinaire.

We in England should endeavour to adopt a similar one-word term, such, for instance, as "zoopathist," which means a studier of animal pathology. It is no more unwieldy than oculist, anæsthetist, and many others. But there is much material from which a new word could be coined.—Yours faithfully, HAMILTON KIRK.

67 Wigmore Street, Portman Square, W.1.

7th February, 1924.

Treatment with Autogenous Vaccine.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Mr. Kirk, in your issue of February 9th, seems to doubt the efficacy of autogenous vaccine in the cases I treated, and quoted in the *Record*. He states that, in his opinion, the removal of the dead bone was responsible for the rapid healing of the abscess of the dog's skull. That is quite evident, but he seems to have overlooked the fact that the ordinary surgical methods vigorously applied over a period of two months failed to remove the "foreign body," and that from the first dose of vaccine no antiseptics were applied to the wound at all. I only wish that the benefit of a certain line of treatment were always so obvious to the client and to myself as the use of vaccine in this case.

With regard to the old mare which did not respond to treatment, I was handicapped by her being a valueless animal on a farm eight miles from my surgery. Autogenous vaccine is only effective against the organisms present in the lesion, and in this case the wound was constantly exposed to re-infection from the soil, without any attempt being made to cleanse even the exterior of the wound. The proper course would have been to prepare another vaccine from the discharges present, and keep the animal indoors. If Mr. Kirk has treated such a case on a farm during hay harvest, he will appreciate the cause of failure.

I am no heretic on autogenous vaccines, but I am convinced of their efficacy in purulent conditions, and with improved laboratory methods they will have still greater scope.

I note that Mr. Kirk himself, in *The Record* dated March 10th, 1923, described a case of abscess formation in a West Highland terrier which he treated with *stock* staphylococcus streptococcus bacteria (apparently successfully). If any benefit is derived from stock vaccines, how can he doubt the increased efficacy of treatment by autogenous vaccine? I have yet to see any pronounced benefit from stock vaccines in these conditions.—Yours faithfully, HAROLD P. ROBINSON.

42 Chepstow Road, Newport, Mon.

12th February, 1924.

Veterinary Inspectors' Fees.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I notice in your columns that veterinary surgeons in various parts of the country are complaining about the fees allowed by local authorities for veterinary inspectors, etc.

About a year ago the part-time veterinary inspectors in Montgomeryshire were offered very unsatisfactory terms by the Montgomeryshire County Council.

I called a meeting of the veterinary surgeons concerned, and I am glad to say that they all turned up. We drew up a scale of what we considered reasonable terms, and decided not to work for anything less. All the members were loyal, and very soon we were granted all we asked for.

I suggest that veterinary surgeons should do the same in other counties. It is almost impossible for one man to obtain satisfactory terms from a local governing body, but it can be accomplished quite easily by uniting.

In any case, veterinary surgeons with any respect for themselves should not work for the ridiculously low fees allowed in some counties. How can they expect farmers to pay them reasonable fees while they work for wealthy county councils for less pay than dock labourers get?

It is all very well for certain individuals to sneer at "Trade Unionism." We are not yet living in "Utopia," and if we do not look after our own ends, no one else will. After all, we only want what is right. It costs a lot of money to qualify, and, unlike most other people, we are unable to earn anything until we are at least twenty-one years of age.

Turning to another subject, I am glad to see that Mr. A. W. Holtum has drawn attention in your columns to the appointment of a Veterinary Officer for Birkenhead, and I wish earnestly to support his remarks. We are suffering to-day from the neglect of earlier generations of veterinary surgeons, who allowed purely veterinary work to pass into the hands of doctors, lay meat inspectors, etc., with the result that some of our municipal appointments are *very* subservient to Medical Officers of Health and others.

It behoves the present generation of veterinary surgeons to see that this tendency is reversed in the near future.—I am, Sir, yours faithfully, LEONARD LL. JONES.

Llansantffraid.

February 2nd, 1924.

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